Albertans & Climate Change

Taking Action

Key Actions to Date

March 2001

105-01875/

In October 2002, the Government of Alberta released *Albertans & Climate Change: Taking Action*, Canada's first government action plan to address climate change and reduce greenhouse gas emissions.

The Government of Alberta is taking a lead on climate change and greenhouse gas reductions with initiatives such as:

- Canada's first legislation to address greenhouse gas emissions
- North America's largest green power contract
- $100 million in interest-free loans for municipal energy efficiencies
- $30 million towards technology/innovation and energy efficiency, and
- mandatory greenhouse gas emissions reporting by large emitters, coming in the near future

This booklet summarizes some of the highlights of the progress that Alberta has made since the action plan was launched.

Government Leadership

CLIMATE CHANGE LEGISLATION Alberta is the first jurisdiction in Canada with climate change-specific legislation. The *Climate Change Management and Emissions Act* provides the legal backing for implementing the province's climate change action plan.

www.gov.ab.ca/env

GOVERNMENT GREEN POWER PURCHASE The Government of Alberta signed North America's largest green power contract in 2003. As a result of the $200 million agreement, 90 per cent of the electricity used in provincial government operations will come from green power sources by 2005. New wind turbines in southern Alberta and a new biomass plant in northern Alberta will generate the power.

Alberta leads country in purchase of green power. Government of Alberta news release March 12, 2003. www.gov.ab.ca/acn

MANAGING ALBERTA'S ELECTRICITY SECTOR EMISSIONS The Government of Alberta has accepted recommendations from the Clean Air Strategic Alliance (CASA), providing a framework to reduce significantly emissions of mercury, sulphur dioxide, nitrogen oxides and primary particulate matter from the province's thermal electricity generation. CASA is still developing greenhouse gas recommendations. Coupled with an earlier "clean as gas" rule for all greenhouse gases from new electric generation facilities, these recommendations will likely become the foundation of an electricity sector agreement under the province's climate change action plan.

Full framework and summary recommendations at: www.casa-electricity.org

MANDATORY GREENHOUSE GAS REPORTING A mandatory greenhouse gas reporting framework is in the final planning stages. Alberta Environment has conducted stakeholder workshops to gain agreement on how reporting will be carried out. The Government of Alberta is working with other governments to ensure that this framework complements a national greenhouse gas reporting program.

www.gov.ab.ca/env/climate/actionplan/

SECTOR AGREEMENTS The Government of Alberta is continuing discussions with a number of sectors to develop sectoral agreements. The government has signalled the need for coordination among federal and provincial discussions with industry.

EMISSIONS OFFSET TRADING SYSTEM The Government of Alberta is leading development of an emissions offset trading system to fit Alberta's specific needs and circumstances. The system would be part of negotiated sectoral agreements, complementing any national, continental or international system. Investments in technology (through the Alberta Energy Research Institute) are recognized as part of an emissions reduction strategy.

HYBRID VEHICLES An Alberta Environment pilot program is using three hybrid compact passenger cars for its regional operations. The province is looking at hybrid alternatives to conventional courier vans for the government's internal fleet.

Technology and Innovation

INVESTMENTS IN RESEARCH The Government of Alberta is providing $27 million in funding for Alberta's investment in sustainable energy technologies over a three-year period. The Alberta Energy Research Institute will coordinate this energy research and technology development, in addition to providing $2.7 million a year to 50 Alberta university research training projects in natural gas in coal, fuel cell development, hydrogen technology, enhanced oil and gas recovery and emissions reductions related to oil sands production and upgrading, conventional oil, gas and coal.

For more on this research, visit www.aeri.ab.ca

CLEAN COAL TECHNOLOGY Through the Alberta Energy Research Institute, the Government of Alberta is a partner in the Canadian Clean Coal Power Coalition's research and development of cleaner coal technologies for electricity generation. The institute is also funding an industrial research chair at the University of Alberta for advanced coal cleaning and combustion, aimed at reducing mercury emissions.

www.canadiancleanpowercoalition.com

FUEL CELL TECHNOLOGY Excess heat from a state-of-the-art high voltage fuel cell now heats the swimming pool at the Northern Alberta Institute of Technology. The (200–kilowatt) fuel cell installation is funded through a $3.25 million applied research project that involves the Alberta Energy Research Institute, ATCO Gas and Western Economic Diversification Canada. The project will provide both energy savings and learning opportunities for those studying electrical generating technologies.

$3.25 million applied research project: NAIT news release, June 24, 2003, www.nait.ab.ca/news

COMBINED GREENHOUSE HEAT AND POWER In partnership with Climate Change Central, the Government of Alberta provided funding for a pilot installation of a combined heat and power system designed by Mariah Energy Corporation in Suntec Greenhouses, Medicine Hat. The project is expected to halve the greenhouse's carbon dioxide emissions, reduce nitrous oxide emissions by 97 per cent, cut fuel/power costs and create surplus energy for sale to the provincial grid. Results of this pilot will be useful to light industrial users interested in increasing their energy efficiency and reducing greenhouse gas emissions.

Mariah Energy-Climate Change Central sponsored project wins APEGGA Award: Climate Change Central news release, May 9, 2003 www.climatechangecentral.com

OPTIONS FOR BITUMEN RECOVERY The Dover Vapex Field Pilot is a $30 million project – funded 25 per cent by the Alberta Energy Research Institute, 25 per cent by the federal government and the rest by industry partners – situated just north of Fort McMurray at Devon's Dover lease. The pilot project injects vaporized solvents into heavy oil. The promise is for significantly reduced greenhouse gas emissions and water consumption, compared to steam-assisted gravity drainage technology.

Energy research helping reduce CO_2 emissions: Government of Alberta news release, September 4, 2003, www.gov.ab.ca/acn

MORE OLEFINS, LESS ENERGY A consortium of Nova Chemicals, the Alberta Research Council Inc., and the University of Waterloo received funding (July 2003) to develop an improved separation process for production of olefins at petrochemical plants. (Olefins are the synthetic polymers of ethylene or propylene used in textile fibers and "nylon" rope.) The consortium's process, based on a new membrane technology, offers a viable alternative to the high-cost, energy consuming operation currently performed by large distillation columns.

Carbon Management

ROYALTY CREDITS The Government of Alberta's 2003 royalty credit program offsets up to 30 per cent of costs for projects that capture/inject carbon dioxide into oil or gas pools to improve resource recovery and store the carbon dioxide. In addition to this $15 million program, the province has revised royalty deductions under its *Enhanced Oil Recovery Program* for carbon dioxide enhanced projects. Additional royalty reductions will be available to cover the higher costs involved in this type of enhanced oil recovery. www.energy.gov.ab.ca/ind/publications

CAPTURE AND STORAGE Part of the Alberta Energy Research Institute's energy strategy aims to significantly reduce the cost of carbon dioxide capture and compression. The goal is a 75 per cent reduction for new facilities and 50 per cent for retrofit operations. www.aeri.ab.ca

COAL SEAM INVENTORY To help assess the potential of carbon dioxide to enhance the recovery of natural gas in coal, the Alberta Geological Survey has completed a report on coal seams in targeted areas of Alberta. This is part of a three-year data collection/analysis project. www.ags.gov.ab.ca

ENHANCED OIL RECOVERY MONITORING Alberta Environment and the Alberta Energy Research Institute are involved in a monitoring project for carbon dioxide enhanced oil recovery in Weyburn, Saskatchewan. This $25 million, four-year research initiative is examining technologies that monitor and evaluate the long-term reliability of storing carbon dioxide in geological formations.
www.aeri.ab.ca

Energy Conservation

ENERGY SOLUTIONS ALBERTA Opened in 2003, Energy Solutions Alberta is a provincial office of energy efficiency aimed at helping Albertans reduce emissions through energy conservation, improved efficiency and increased access to new low-emissions technologies. Established by Climate Change Central, Energy Solutions Alberta aims to be the main source in Alberta for consumer education and energy conservation programs.

For more on this office, visit www.energysolutionsalberta.com

MUNICIPAL ENERGY EFFICIENCY The Government of Alberta's four-year, $100 million interest-free *ME First!* loan program helps municipalities carry out energy efficiency projects in their buildings. Administered by Energy Solutions Alberta, the program's first approved projects are expected to be announced in spring 2004.

www.energysolutionsalberta.com

GREENER BUILDINGS The *Alberta Plus Initiative* provides building design dollars to encourage Alberta developers to increase their energy efficiency and cut greenhouse gas emissions. Energy Solutions Alberta provides up to $40,000 of extra funding, towards funds available from the Natural Resources Canada commercial building incentive program. A Vegreville 55-suite senior citizens complex received the maximum $100,000 in federal and provincial rebates through this program in 2003. Energy savings at the complex will be passed on to residents in the form of reduced rents.

www.energysolutionsalberta.com

FURNACE REBATES Energy Solutions Alberta is running a pilot *Alberta Furnace Rebate Program* from January, 2004 until March 31, 2004, with rebates up to $400 for consumers who replace their older furnaces with an Energy Star™ high efficiency model.

Furnace rebates heating up energy efficiency in Alberta: Energy Solutions Alberta news release, January 21, 2004
www.energysolutionsalberta.com

SCRAPPING OLDER CARS *Car Heaven Alberta* aims to get up to 1,500 vehicles 13 years and older off the streets of Edmonton and Calgary as one means of tackling greenhouse gas reductions. The Government of Alberta provided support for this Climate Change Central-sponsored program that offers as incentives bus passes and discounts towards buying a bike. Partners include the Clean Air Foundation, Pick-Your-Part, the Kidney Foundation, the City of Calgary and the City of Edmonton.

For more information, visit www.energysolutionsalberta.com

LESS IDLING PROMOTED Climate Change Central received Government of Alberta support for a *Reduce Idling Program* to encourage Edmonton and Calgary drivers stopping near schools or municipal buildings to turn off their vehicles while they wait. Testing showed that the number of idling vehicles was reduced by 10 per cent in the study areas. Partners include Natural Resources Canada and the Sierra Club of Canada.

www.climatechangecentral.com

Renewable and

Alternative Energy

GREEN POWER PURCHASE The Government of Alberta's commitment to buy 90 per cent of its power needs from green sources (see Government Leadership), means that new wind power and biomass facilities are being expanded/built in Alberta. This will make green power more accessible and affordable to commercial and household consumers. Alberta's wind capacity has increased to approximately 100 megawatts in 2002, up from 21 megawatts in 1996.

www.gov.ab.ca/acn

SOLAR PANELS AT ALBERTA LEGISLATURE A small (three-kilowatt) solar array is now a part of the power behind the Alberta Legislature. Installation of this solar array has helped determine the regulatory/financial barriers that renewable and alternative energy generation projects face in relation to the provincial power grid.

www.gov.ab.ca/acn

ENERGY SAVING IN PARKS A solar energy project at Lesser Slave Lake Provincial Park completed in March 2004 has upgraded an existing solar array on one of the park's buildings. It is one of 21 energy efficiency projects funded by Alberta Environment at parks throughout the province. Most of these involve replacement of older, inefficient furnaces or upgrading of insulation.

Storing Carbon in

Agricultural and Forestry Sinks

BIOCAP CANADA The BIOCAP Canada Foundation targets university research support in Canada, especially in priority areas of biosphere greenhouse gas research. The Government of Alberta supports BIOCAP research specifically into the economics of various Alberta farm management practices and the policy tools to encourage them.

For more information, visit: www.biocap.ca

AGRICULTURAL SINKS The Government of Alberta, in partnership with BIOCAP Canada, is funding a project to examine legal mechanisms for use with agricultural sinks. The project, led by the University of Calgary, will look at the contractual arrangements and market mechanisms that are needed for trading emissions offsets, as well as defining how buyers and sellers share the risks.

Adapting to

Climate Change

CLIMATE CHANGE ADAPTATION PLANNING Twelve Alberta government departments and Climate Change Central have developed a provincial climate change adaptation strategy. Research and analysis is being carried out in key areas like glacier response and southern Alberta's water supply and the response of Alberta's ecosystems to climate change.

DESIGNS FOR A CHANGING FUTURE Alberta is one of the first North American jurisdictions to require that any proposed facility's design or layout can accommodate future changes to emissions standards, limits and guidelines. This unique requirement is built into Alberta Environment's environmental impact assessments for projects whose nature or scale requires them (pulp mills, mines, oil refineries, etc.).

PRAIRIE ADAPTATION RESEARCH The Government of Alberta is a partner in the Prairie Adaptation Research Collaborative, an organization whose projects involve research into climate change impacts on the Canadian prairies. The Government of Alberta is also providing $7.5 million (over three years) to the Alberta Ingenuity Fund to help fund projects, through its new water research institute.

www.parc.ca

WATER FOR LIFE In November 2003, the Government of Alberta released *Water for Life: Alberta's Strategy for Sustainability*, the most comprehensive strategy of its kind in Canada. Based on more than 18 months of consultations and discussions with Albertans and water experts, it outlines a series of short-, medium- and long-term actions aimed at ensuring Albertans have safe, secure drinking water, healthy aquatic ecosystems and a reliable water supply to support provincial economic development.

More on the plan at www.waterforlife.gov.ab.ca

Next Steps

The Government of Alberta's action plan on climate change aims by the year 2020 to reduce the province's emissions intensity by 50 per cent below 1990 levels. The plan's timeframe recognizes the importance of such things as capital stock turnover, technological innovation and changes in consumer behaviour.

The Government of Alberta will continue to advance an integrated, innovative approach that can serve as a model for a national climate change plan. And that plan, in the words of the 2004 federal Speech from the Throne, will be developed "in partnership with provincial and territorial governments and other stakeholders."

To find out more about what Albertans are doing to reduce emissions, go to www.gov.ab.ca/env or call (780) 427-6267 for an information package on *Albertans & Climate Change: Taking Action*.

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ISBN No: 0-7785-3154-6
Pub No: I/970
printed on recycled paper

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